

A REVISION OF THE SILLAGINID FISHES OF THE ARABIAN GULF WITH A DESCRIPTION OF *SILLAGO ARABICA* NEW SPECIES.

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McKay, R.J. and McCarthy, L.J. 1989 11 13: A revision of the sillaginid fishes of the Arabian Gulf with a description of *Sillago arabica* new species. *Mem. Qd Mus* 27(2): 551-553. Brisbane. ISSN 0079-8835.

Three species of sillaginid fishes are known from the Arabian Gulf, *Sillago sihama*, *Sillago attenuata*, and *Sillago arabica* sp. nov.

□Pisces, Sillaginidae, whiting, Arabian Gulf.

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McKay (1985) revised the fishes of the family Sillaginidae and recorded two species from the Arabian Gulf: *Sillago sihama* (Forsskål, 1775) and *Sillago attenuata* McKay, 1985. The former species was represented by 3 specimens, which were listed as 'probably related to *S. sihama*'; the swimbladder was not studied. Recent collecting by the second author and her husband, Brock E. Stanaland, in the Arabian Gulf, resulted in a number of sillaginid fishes being taken by seine net. The second author identified the material as belonging to three species, *S. sihama*, *S. attenuata* and a small new species described here as *Sillago arabica*. In this paper, acronyms and abbreviations follow McKay (1985).

KEY TO THE SILLAGINID FISHES OF THE ARABIAN GULF

1. Dorsal spines 11; lateral scales 65-72; swimbladder with two forwardly projecting anterior extensions, a short anterolateral extension with

a long convoluted tubule extending posteriorly along abdominal wall to level of ventral duct-like process, and two posterior extensions projecting into caudal region; vertebrae 34
.....*Sillago sihama*
Dorsal spines 12-13 (rarely 11); lateral line scales 74-80; swimbladder without anterior extensions and with a short single posterior extension; vertebrae 37-40 2

2. Dorsal fin rays 19-21; anal fin rays 18-20; sides of body with two to three series of dark blotches; snout long, 38-41 percent of head length; vertebrae 15 + 2 + 20-21, total 37-39 ..
.....*Sillago attenuata*

Dorsal fin rays 22-24; anal fin rays 22-24; body uniform pale, without dark blotches; snout short, 31-38 percent of head length; vertebrae 15-16 + 0-1 + 21-24, total 38-40
..... *Sillago arabica*

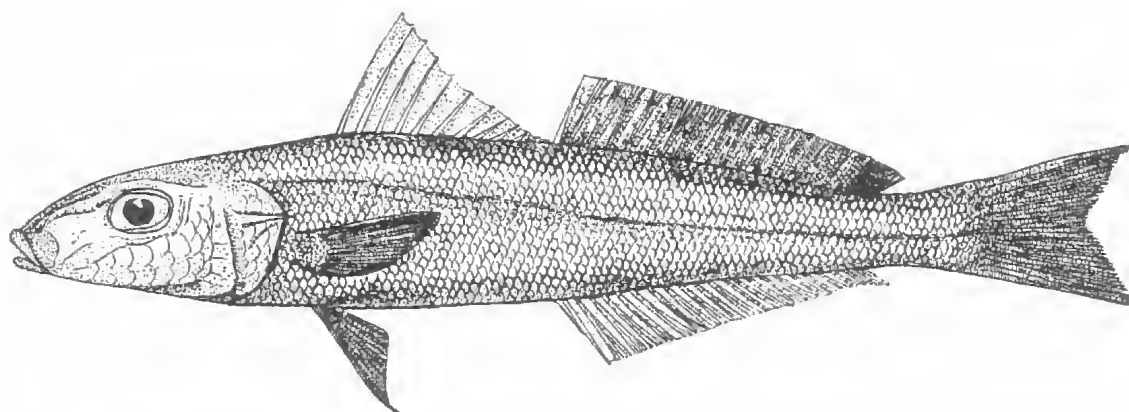


FIG. 1. Holotype of *Sillago arabica* sp. nov.

***Sillago (Parasillago) arabica* new species**
 Shortnose Whiting
 (Fig. 1, 2A, 3A-C)

MATERIAL EXAMINED

HOLOTYPE: SL 98 mm, collected by L. Stanaland, October 1982, at Tanajib Bay, Arabian Gulf, 27°50'N; 48°52'E, I.21736.

PARATYPES: Arabian Gulf collected by L. Stanaland, Tanajib Bay, (SL 84-115 mm) 1. 21765 (4) 5.X.1982, I.22670 (1) 17.VI.1984, I.22671 (1) 5.X.1985; Manifa Bay, I.22669 (25) 13.X.1984, I.22672 (13) 6.VIII.1985, I.22673 (6), I.22674 (1), 6.X.1985, BPBM 31806 (1), BM 1987.6.30.6 (1); MNHN 1987-1098 (1), RUSI 26877 (1), AMNH 48676 (1), USNM 288497 (1).

DIAGNOSIS

Dorsal fins XII-XIII, 1, 22-24; anal fin 11, 22-24, lateral line scales 75-80. Swimbladder without anterior extensions and with a single posterior extension. Vertebrae 15-16 abdominal, 22-25 caudal, total 38-40.

DESCRIPTION

(Holotype and 67 paratypes) dorsal fins XII (56) XIII (10), 1, 22-24; anal fin 11, 22-24. Lateral line scales 75-80. TR 5-6 above, 11-12 below, 5 scales between L. lat. and spinous dorsal fin. Cheek scales in 3-4 rows, all ctenoid.

Proportional dimensions as percent of SL (68 paratypes): Greatest depth of body 16-20; head length 24-29; snout tip to second dorsal fin origin 52-56; snout tip to anal fin origin 53-59; least depth of caudal peduncle 7-8. Proportional dimensions as percent of head length: length of snout 31-38 (mostly 33-35); horizontal diameter of eye 22-29; least width of interorbital 17-20.

VERTEBRAE: (Dissected, stained and cleared) 15-16 + 0-1 + 21-24, 15-16 abdominal, 22-25 caudal, total 38-40 (21 paratypes).

COLOUR IN ALCOHOL: (Holotype) head and body pale sandy brown, slightly paler on mid-line of belly; mid-lateral band indistinct; upper part of opercle slightly dusky in the centre; spinous dorsal, second dorsal, and caudal fins lightly dusted with black, other fins hyaline.

SWIMBLADDER: Anterior margin truncate or slightly rounded without anterior extensions; a single short posterior extension; a duct-like tubular process from ventral surface to urogenital aperture (Fig. 2A).

DISTRIBUTION

Arabian Gulf,

BIOLOGY

Sillago arabica is an inshore species captured by

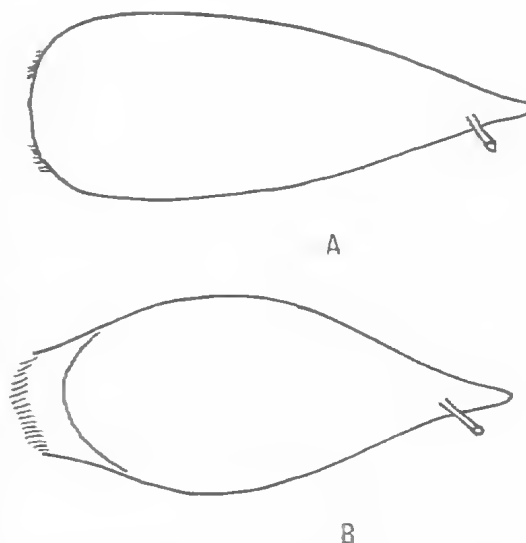


FIG. 2. Swimbladders: A. *Sillago arabica* sp. nov. B. *S. attenuata*.

beach seine. Salinities taken at collecting sites were 46‰-48‰, and water temperatures varied from 27.7°C to 33.1°C.

REMARKS

In McKay (1985: 14, couplet 9), this new species keys to those having a total vertebrae count of 37-39 (now 37-40) and includes *Sillago boutani*, *S. schomburgkii* and *S. attenuata*. From *S. boutani* it differs in having 15 to 16 abdominal vertebrae instead of 13 to 14, one or no modified vertebrae instead of 3 to 4, and 22 to 24 rays in the second dorsal and anal fins instead of 21 and 21 to 22 respectively in *S. boutani*. From *S. schomburgkii* it differs in having 22 to 24 dorsal rays instead of 20 to 22, and 22 to 24 anal rays instead of 17 to 20, the snout is shorter (31 to 38% vs 39 to 44% head length), and the latter species has 8 to 11 modified vertebrae overlying the longer post-coelomic extension to the swimbladder.

***Sillago (Parasillago) attenuata* McKay**
 Slender Whiting
 (Fig. 2B, 3D)

Sillago (Parasillago) attenuata McKay, 1985, p. 36 (Arabian Gulf).

MATERIAL EXAMINED

In addition to specimens mentioned by McKay (1985), Arabian Gulf (4) collected by L. Stanaland; Tanajib Bay,

I.22663, 5.X.1985; I.22665, 22.II.1984; I.22666, 29.XII.1985; Manifa Bay, I.21762, 18.IV.1984.

DIAGNOSIS

Dorsal fins XI–XIII (mostly XII), 1, 19–21; anal fin II, 18–20; lateral line scales 73–77. Vertebrae 15 abdominal, 22–23 caudal, total 37–39. Body with faint to quite distinct dark blotches in three series laterally; the upper row of 12 short black lines at dorsal mid-line near base of fins; middle row of 7–9 spots on upper back; a mid lateral row of 10–11 elongate black blotches below lateral line; snout with two dark longitudinal lines converging anteriorly in some examples.

DESCRIPTION

See McKay (1985: 36).

SWIMBLADDER: Almost transparent in juveniles; an elongate somewhat oval-shaped bladder, rounded anteriorly and tapering to a short single posterior extension; a short tubular duct-like process from ventral surface to urogenital aperture (Fig. 2B).

Sillago (Sillago) sihama (Forsskal) Sand Smelt (Fig. 3E–J)

Atherina sihama Forsskal, 1775, p. 70 (Red Sea).

MATERIAL EXAMINED

Ras Tanura, Tarut Bay, upper bay Zaal Island, April–June, 1948, USNM 14759 (10); Ras Tanura, American City Beach on Gulf side, June 1948, collected Erdman, USNM 147960 (3); Manifa Bay, 13.X.1984, I.22667 (5); Tanajib Bay, 17.VI.1984, collected L. Stanaland, I.21764 (1).

DIAGNOSIS

Dorsal fins XI, 1, 20–23; anal fin II, 21–24, lateral line scales 65–69. Vertebrae 34. Swimbladder with two median anterior extensions terminating each side of auditory capsule; a pair of anterolateral extensions, each sending a blind tubule towards upper part of gill opening and then recurving posteriorly to lie alongside swimbladder to about level of ventral duct; two posterior extensions projecting well into caudal region (Fig. 1).

DESCRIPTION

See McKay (1985: 9).

GEOGRAPHIC VARIATION

Dissected material had 13 abdominal vertebrae instead of 14 as recorded by McKay (1985). Counts

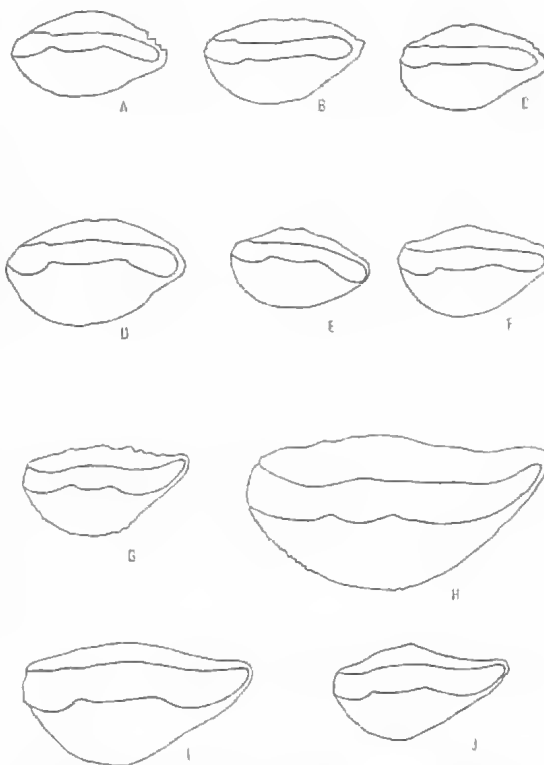


FIG. 3. Right otoliths: A–C, *Sillago arabica* sp. nov. D, *S. attenuata*. E–F, *S. sihama*, Arabian Gulf. G, H, *S. sihama*, Cochin, India. I, *S. sihama*, Denpasar, Indonesia. J, *S. sihama*, Proserpine, Queensland.

were 13 + 6 + 15 (3) and 13 + 7 + 14 (1). The otolith of two specimens from the Arabian Gulf differs from the more usual shape in having the posterior tip more rounded, and the cauda is directed more downwards (Fig. 3E, F). This variation indicates that the Arabian Gulf population is genetically isolated.

ACKNOWLEDGEMENTS

We wish to record our appreciation of the efforts of Brock E. Stanaland who hauled the deeper end of the seine net. Our sincere thanks to Drs P. Jell and G. Ingram for reading the manuscript.

LITERATURE CITED

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